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32692 7590 08/16/2007 3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427			EXAMINER COBANOGLU, DILEK B	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/995,456	MCLAUGHLIN, RICHARD P.	
	Examiner	Art Unit	
	Dilek B. Cobanoglu	3626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>2/25/02, 04/18/02, 02/07/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Notice to Applicant

1. This communication is in response to the Request for Continued Examination (RCE) received on 04/24/2007 and preliminary amendment to RCE received on 05/22/2007. Claims 1-44 remain pending.

Specification

2. The amendment filed 05/22/2007 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: "transforming the data in the first and second tables to corresponding first and second discrepancies" within claims 22, 23, 30, 34 and 40. In particular, Applicant does not point to, nor was the Examiner able to find, any support for a "transforming the data in the first and second tables to corresponding first and second discrepancies". As such, Applicant is requested to clarify the above issues and to specifically point out support for the newly added limitations in the originally filed specification and claims.

3. Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

Art Unit: 3626

art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 22, 23, 30, 34 and 40 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention and for the reasons set forth in the objection to the specification above. In particular, the newly added limitation "transforming the data in the first and second tables to corresponding first and second discrepancies" was not described in the specification as originally filed.

6. Independent claims 22, 30 and 34 recite limitations that are new matter, as discussed above.

7. Claims 23-29, 31-44 incorporate the deficiencies of independent claims 22, 30 and 34, through dependency, and are also rejected.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

9. Claims 22-44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. Independent claims 22, 30, 34 and 40 have been amended now to recite "transforming the data in the first and second tables to corresponding first and second discrepancies"; there is no specific description of this newly added limitation in the specification; it is not clear which data in the tables are transformed from the tables and to where.

B. Claims 23-29, 31-33, 35-39 and 41-44 are dependent to claim 30, and follows the same limitations, therefore they are rejected under 35 U.S.C. 112, second paragraph with the same reasons described above and incorporated herein.

C. The amended claim 30 discloses "planning an orthodontic treatment based upon the crowding/spacing data entered into the first and second tables and the first and second discrepancies". It is not clear how the planning process occurs on the claim. Is the planning to figure out the distance and direction required to move each tooth, or only finding out the existing space between the teeth and the midline. Also, in the following claims, it's disclosed that summing the crowding/spacing data of the first and second tables and then summing these totals, so creating first and second initial discrepancies; entering other created space such as extractions, stripping, expansion and distalizing, then adding these values with the first and second totals to create first and second remaining discrepancies. It is not clear how and for what these discrepancies are used. It's not clear what the obtained values are for and how they are to be used. Are the discrepancies the distances from the midline and how is the distance from each tooth from the midline is calculated or obtained from summing these values is not clear.

D. Claims 31-44 are dependent to claim 30, and follows the same limitations, therefore they are rejected under 35 U.S.C. 112, second paragraph with the same reasons described above and incorporated herein.

Claim Rejections - 35 USC § 101

10. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

11. Claims 1-44 are rejected under 35 U.S.C. 101 because these claims do not produce tangible and useful results.

A. Claims 1, 14 and 22 disclose “a computer implemented method of developing an orthodontic treatment comprising: entering crowding/spacing data, curve of spee data and incisor position data into first and second tables, and summing the first and second data and obtaining a first and second total”. The amended claims 22 and 30 disclose “entering midline and molar relationship into a midline chart; entering first to sixth crowding spacing data into a discrepancy chart having first and second tables; transforming the data in the first and second tables to corresponding first and second discrepancies; and entering data from the first and second tables into an anticipated treatment chart”. This is not a tangible and useful result. At the end of summing these data one can obtain a number for each table, and this is not a tangible and useful data for any treatment. Also, it’s not clear what these numbers represent and how they are to be used.

B. Claims 2-13, 15-21 and 31-44 are dependent claims and disclose the same limitations, therefore they’re rejected under 35 U.S.C. 101 with the same reasons as described above.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claims 1-44 are rejected under 35 U.S.C. 102(b) as being unpatentable by Andreiko et al. (hereinafter Andreiko) (U. S. Patent No. 5,447,432).

A. Claim 1 has been amended now to recite a computer implemented method of developing an orthodontic treatment comprising:

- i. entering first crowding/spacing data in first and second tables, wherein the first table relates to cuspid to midline regions of a patient's jaw, wherein the second table relates to second molar to midline regions of the patient's jaw, and wherein the first crowding/spacing data relates to the right and left cuspid to midline regions of the patient's jaw (Andreiko; col. 12, lines 18-32, col. 13, lines 53-68, col. 37, lines 5-18 and Fig. 4);
- ii. entering second crowding/spacing data in the second table but not the first table, wherein the second crowding/spacing data relates to bicuspid regions of the patient's jaw (Andreiko; col. 17, lines 40-59);
- iii. entering third crowding/spacing data in the second table but not the first table, wherein the third crowding/spacing data relates to molar regions of the patient's jaw (Andreiko; col. 17, lines 40-59);

- iv. entering curve of Spee spacing data in the first and second tables, wherein the curve of Spee spacing data relates to space required to correct a curve of Spee of the patient's jaw (Andreiko; col. 15, line 53 to col. 16, lines 4);
- v. entering midline spacing data in the first and second tables, wherein the midline spacing data relates to space created and required to move a midline of teeth in the patient's jaw (Andreiko; col. 37, lines 19-35);
- vi. entering incisor position data in the first and second tables, wherein the incisor position data relates to space required to correct positions of incisors in the patient's jaw (Andreiko; col. 17, lines 40-59);
- vii. creating for the first table but not the second table a first total by summing the first crowding/spacing data, the curve of Spee spacing data, the midline spacing data, and the incisor position data (Andreiko; col. 37, lines 19-51 and col. 39, lines 53-55); and,
- viii. creating for the second table but not the first table a second total by summing the first crowding/spacing data, the second crowding/spacing data, the third crowding/spacing data, the curve of Spee spacing data, the midline spacing data, and the incisor position data (Andreiko; col. 40, lines 2-18 and line 65 to col. 41, lines 15).

B. As per claim 2, Andreiko discloses the method of claim 1 further comprising adding other created space to at least one of the first and second totals (Andreiko; col. 14, lines 25-35).

C. As per claim 3, Andreiko discloses the method of claim 2 wherein the other created space comprises space created by extractions (Andreiko; col. 14, lines 25-35).

D. As per claim 4, Andreiko discloses the method of claim 2 wherein the other created space comprises space created by stripping (Andreiko; col. 12, lines 46-64).

E. As per claim 5, Andreiko discloses the method of claim 4 wherein the other created space comprises space created by expansion (Andreiko; col. 5, lines 13-17).

F. As per claim 6, Andreiko discloses the method of claim 5 whether the other created space comprises space created by distalizing (Andreiko; col. 12, lines 46-64).

G. As per claim 7, Andreiko discloses the method of claim 2 wherein the other created space comprises space created by expansion (Andreiko; col. 5, lines 13-17).

H. As per claim 8, Andreiko discloses the method of claim 7 wherein the other created space comprises space created by distalizing (Andreiko; col. 12, lines 46-64).

I. As per claim 9, Andreiko discloses the method of claim 2 wherein the other created space comprises space created by distalizing (Andreiko; col. 12, lines 46-64).

J. As per claim 10, Andreiko discloses the method of claim 9 wherein the other created space comprises space created by stripping (Andreiko; col. 12, lines 46-64).

K. As per claim 11, Andreiko discloses the method of claim 1 further comprising entering midline and molar relationships into a midline chart (Andreiko; col. 42, lines 42-68).

L. As per claim 12, Andreiko discloses the method of claim 1 further comprising entering data from the first and second tables into an anticipated treatment chart (Andreiko; col. 44, line 63 to col. 45, line 22).

M. As per claim 13, Andreiko discloses the method of claim 12 further comprising entering midline and molar relationships into a midline chart (Andreiko; col. 42, lines 42-68).

N. As per claim 14, Andreiko discloses a computer implemented method related to orthodontics, which the first part of the claim repeats the same limitations as claim 1, therefore is rejected with the same reasons given above and incorporated herein. Andreiko also discloses a method related to orthodontics comprising:

- i. entering other created space in the first and second tables (Andreiko; col. 14, lines 25-35);
- ii. summing the first total and the other created space to create a third total and entering the third total in the first table as a first remaining discrepancy (Andreiko; col. 40, lines 42-64); and,

- iii. summing the second total and the other created space to create a fourth total and entering the fourth total in the second table as a second remaining discrepancy (Andreiko; col. 40, lines 42-64).

O. Claims 15-21 repeat the same limitations as claims 4-5-6-3-11-12-13 respectively, and therefore are rejected with the same reasons as described above and incorporated herein.

P. Claim 22 has been amended now to recite a computer implemented method related to orthodontics, which the first part of the claim repeats the same limitations as claim 1, therefore is rejected with the same reasons given above and incorporated herein. Andreiko also discloses a method related to orthodontics comprising:

- i. entering midline and molar relationships into a midline chart (Andreiko; col. 42, lines 42-68)
- ii. transforming the data in the first and second tables to corresponding first and second discrepancies (Andreiko; col. 44, line 63 to col. 45, line 22); and,
- ii. entering data from the first and second tables into an anticipated treatment chart (Andreiko; col. 44, line 63 to col. 45, line 22).

Q. Claim 23 has been amended now to recite the method of claim 22 wherein the transforming of the data in the first and second discrepancies comprises summing the data in the first and second tables to create respective first and second totals, entering the first total into the first table as a first discrepancy, and

entering the second total into the first table as a second discrepancy (Andreiko; col. 37, lines 19-51, col. 39, lines 53-55 and col. 40, line 65 to col. 41, line 15).

R. As per claim 24, Andreiko discloses the method of claim 23 wherein the first and second discrepancies comprise first and second initial discrepancies, respectively, and wherein the method further comprises:

- i. entering data related to other created space into the first and second tables (Andreiko; col. 14, lines 25-35);
- ii. summing the first initial discrepancy with the other created space to create a first remaining discrepancy and entering the first remaining discrepancy into the first table (Andreiko; col. 40, lines 42-64); and,
- iii. summing the second initial discrepancy with the other created space to create a second remaining discrepancy and entering the second remaining discrepancy into the second table (Andreiko; col. 40, lines 42-64).

S. Claims 25-29 repeat the same limitations as claims 3-4-5-6-3 respectively, and therefore are rejected with the same reasons as described above and incorporated herein.

T. Claim 30 has been amended now to recite a method related to orthodontics, which the first part of the claim repeats the same limitations as claim 1, therefore is rejected with the same reasons given above and incorporated herein. Andreiko also discloses a method related to orthodontics comprising:

- i. Computer entering crowding/spacing data in a first table, wherein the crowding/spacing data entered into the first table relate only to a cuspid to midline region of a patient's jaw (Andreiko; col. 12, lines 18-32, col. 13, lines 53-68, col. 37, lines 5-18 and Fig. 4);
- ii. Computer entering crowding/spacing data in a second table, wherein the crowding/spacing data entered into the second table relate to a second molar to midline region of the patient's jaw and include the crowding/spacing data related to the cuspid to midline region of the patient's jaw (Andreiko; col. 12, lines 18-32, col. 13, lines 53-68, col. 37, lines 5-18 and Fig. 4);
- iii. Computer transforming at least some of the data in the first and second tables to corresponding first and second discrepancies (Andreiko; col. 44, line 63 to col. 45, line 22);
- iv. planning an orthodontic treatment based upon the crowding/spacing data entered into the first and second tables and the first and second discrepancies (Andreiko; col. 4, lines 1-9, lines 16-24, line 59 to col. 5, line 23 and Fig. 4, 7).

U. As per claim 31, Andreiko discloses the method of claim 30 further comprising adding midline and molar relationships to a midline chart (Andreiko; col. 42, lines 42-68).

V. As per claim 32, Andreiko discloses the method of claim 30 further comprising adding data related to the planned orthodontic treatment to an anticipated treatment chart (Andreiko; col. 44, line 63 to col. 45, line 22).

W. As per claim 33, Andreiko discloses the method of claim 32 further comprising adding midline and molar relationships to a midline chart (Andreiko; col. 42, lines 42-68).

X. Claim 34 has been amended now to recite the method of claim 30 wherein the transforming of the data in the first and second tables to corresponding first and second discrepancies comprises: summing the crowding/spacing data of the first table to create a first total and entering the first total in the first table as a first discrepancy; and, summing the crowding/spacing data of the second table to create a second total and entering the second total in the second table as a second discrepancy (Andreiko; col. 40, lines 42-64).

Y. As per claim 35, Andreiko discloses the method of claim 30 wherein the crowding/spacing data in the second table includes crowding/spacing data relating to a bicuspid region of the patient's jaw (Andreiko; col. 17, lines 40-59).

Z. As per claim 36, Andreiko discloses the method of claim 30 wherein the crowding/spacing data in the second table includes crowding/spacing data relating to a molar region of the patient's jaw (Andreiko; col. 17, lines 40-59).

AA. As per claim 37, Andreiko discloses the method of claim 30 wherein the crowding/spacing data in the first and second tables includes space required to

correct a curve of Spee of the patient's jaw (Andreiko; col. 15, line 53 to col. 16, lines 4).

BB. As per claim 38, Andreiko discloses the method of claim 30 wherein the crowding/spacing data in the first and second tables includes space created and required to move a midline of teeth in the patient's jaw (Andreiko; col. 4, line 59 to col. 5, lines 23).

CC. As per claim 39, Andreiko discloses the method of claim 30 wherein the crowding/spacing data in the first and second tables includes space required to correct positions of incisors in the patient's jaw (Andreiko; col. 4, line 59 to col. 5, lines 23).

DD. Claim 40 has been amended now to recite the method of claim 30 wherein the transforming of the data in the first and second tables to corresponding first and second discrepancies comprises:

- i. summing the crowding/spacing data of the first table to create a first total and entering the first total in the first table as a first initial discrepancy (Andreiko; col. 37, lines 19-51, col. 39, lines 53-55 and col. 40, lines 42-64);
- ii. summing the crowding/spacing data of the second table to create a second total and entering the second total in the second table as a second initial discrepancy (Andreiko; col. 14, lines 25-35, col. 40, lines 2-18 and col. 40, line 65 to col. 41, lines 15);

- iii. entering other created space in the first and second tables
(Andreiko; col. 4, line 59 to col. 5, lines 23);
- iv. summing the first total and the other created space to create a third
total and entering the third total in the first table as a first remaining
discrepancy (Andreiko; col. 40, lines 42-64); and,
- v. summing the second total and the other created space to create a
fourth total and entering the fourth total in the second table as a second
remaining discrepancy (Andreiko; col. 40, lines 42-64).

EE. Claims 41-44 repeat the same limitations as claims 3-4-5-6 respectively,
and therefore are rejected with the same reasons as described above and
incorporated herein.

Response to Arguments

14. Applicant's arguments filed 05/29/2007 have been fully considered but they are
not persuasive. Applicant's arguments will be addressed below in the order in which
they appear.

A. In response to Applicant's argument about rejection of claims 30-44 under 35
U.S.C. § 112, 2nd paragraph, Examiner respectfully submits that claim 30 recites
"computer entering crowding/spacing data in a first table, wherein the
crowding/spacing data entered into the first table relate only to a cuspid to
midline region of a patient's jaw; entering crowding/spacing data in a second
table, wherein the crowding/spacing data entered into the second table relate to

Art Unit: 3626

a second molar to midline region of the patient's jaw and include the crowding/spacing data related to the cuspid to midline region of the patient's jaw; computer transforming at least some of the data in the first and second tables to corresponding first and second discrepancies; and, planning an orthodontic treatment based upon the crowding/spacing data entered into the first and second tables", and "crowding/spacing data" is not clear. The claim states the first data is related to "a cuspid to midline region of a patient's jaw", the second data is related to "a second molar to midline region of the patient's jaw and include the crowding/spacing data related to the cuspid to midline region of the patient's jaw". Examiner would like to submit that these data are unclear; is the data related to "cuspid to midline region" a distance or a coordinate and exactly from which point of the cuspid to which point of the midline (is it perpendicular to the tooth, or midpoint of the jaw). Also, the second data is related to "a second molar to midline region of the patient's jaw", this data is not clear either; is it a distance or a coordinate and exactly from which point of the second molar to which point of the midline. Therefore the discrepancies obtained by adding these data in the first and second tables are not clear. It is not clear how the planning process occurs in the claim 30. Is the planning to figure out the distance and direction required to move each tooth, or only finding out the existing space between the teeth and the midline, and which points of the teeth and midline. Applicant states that "Examiner wants Applicant to narrow independent claim 30 by limiting the orthodontic treatment to determining distances and direction of

Art Unit: 3626

tooth movement, to finding existing space between teeth, to using the discrepancies in a particular way, to specifying an objective and a use for the obtained values, and to defining the discrepancies more precisely"; Applicant continues: "Indeed, these objections ultimately have nothing to do with the clarity of the claim because those skilled in the art surely would know how to plan an orthodontic treatment given the information specified in independent claim 30." Examiner respectfully submits that it's not clear in the claim 30 nor in the following depending claims, what type of crowding/spacing data are entered in the tables. It's not clear if the data are distance or a coordinate and exactly between which points.

B. In response to Applicant's argument about rejection of claims 1-44 under 35 U.S.C. § 101, because these claims do not produce tangible and useful results, Examiner respectfully submits that claims 1, and 14 disclose "entering crowding/spacing data, curve of spee spacing data, midline spacing data and incisor position data into first and second tables, and summing the first and second data and obtaining a first and second total" and amended claims 22 and 30 includes the limitations same as claims 1 and 14 and also the limitation of "transforming the data in the first and second tables to corresponding first and second discrepancies".

Analysis for determining patent eligible subject matter under §101 is a four-step process:

i. First, the claimed invention should fall within one of the four statutory categories. The four statutory categories are a process, a machine, a manufacture or a composition of matter.

ii. Second, the claimed invention should fall within a judicial exception. The Supreme Court has specifically identified three categories of nonstatutory subject matter as: laws of nature, natural phenomena and abstract idea. Applicant argues that the Examiner does not assert that the claimed invention is a law of nature or a natural phenomena, Examiner submits that the claimed invention is an abstract idea and not arguing that it's laws of nature or natural phenomena. The claimed invention is an abstract idea because a table can be created in someone's head or on a piece of paper.

iii. Third, the claimed invention should provide a practical application. The claimed invention should either be a physical transformation or should produce a useful, concrete and tangible result. The claimed invention does not produce a useful result, because it's not specific, substantial and has credible utility. The claimed invention recites a method of developing an orthodontic treatment and entering crowding/spacing , curve of spee spacing, midline spacing, incisor position data, which are not clear in the claim as explained above, and create a first and second tables. Examiner respectfully submits that creating a table is not an actual treatment and the implementation of the treatment is not in the claims. The claimed

invention does not produce a tangible result, because it's an abstract idea as explained above. Applicant argues that the Federal Circuit in *State Street Bank & Trust Co. v. Signature Financial Group Inc.*, 149 F. 3d 1368, 47 USPQ2d 1596 (Fed. Cir. 1998) acknowledges that, "the mere fact that a claimed invention involves inputting numbers, calculating numbers, outputting numbers and storing numbers, in and of itself, would not render it nonstatutory." Examiner agrees that the claimed invention teaches inputting numbers and calculating numbers, but the claimed invention does not teach outputting or storing those numbers. Therefore this acknowledgement would not be suitable for this claimed invention.

iv. Fourth, the claimed invention should wholly preempt all substantial applications of a judicial exception.

All four steps must be applied to each and every claim to form a complete analysis.

Applicant continues in the remarks, pages 21-22 that "For example, independent claim 1 is directed to the transformation of discrete crowding/spacing and other data related to a patient's teeth in different regions of the patient's jaw into final discrepancies that **may be** stored, recorded, and reported and that are accepted and relied upon by orthodontists in the practice of their trades."; Examiner respectfully states that none of the claims include these limitations. There is no end product

in the claims; only entering data into two tables and then summing the values in the tables.

C. In response to Applicant's argument about Andreiko does not teach "entering first crowding/spacing data in first and second tables, wherein the first table relates to cuspid to midline regions of a patient's jaw, wherein the second table relates to second molar to midline regions of the patient's jaw, and wherein the first crowding/spacing data relates to the right and left cuspid to midline regions of the patient's jaw; entering second crowding/spacing data in the second table but not the first table, wherein the second crowding/spacing data relates to bicuspid regions of the patient's jaw; entering third crowding/spacing data in the second table but not the first table, wherein the third crowding/spacing data relates to molar regions of the patient's jaw; entering curve of Spee spacing data in the first and second tables, wherein the curve of Spee spacing data relates to space required to correct a curve of Spee of the patient's jaw entering midline spacing data in the first and second tables, wherein the midline spacing data relates to space created and required to move a midline of teeth in the patient's jaw; entering incisor position data in the first and second tables, wherein the incisor position data relates to space required to correct positions of incisors in the patient's jaw; creating for the first table but not the second table a first total by summing the first crowding/spacing data, the curve of spee spacing data, the midline spacing data, and the incisor position data; and, creating for the second table but not the first table a second total by summing the

first crowding/spacing data, the second crowding/spacing data, the third crowding/spacing data, the curve of Spee spacing data, the midline spacing data, and the incisor position data.”, Examiner respectfully submits that Andreiko teaches entering crowding/spacing, curve of Spee spacing, midline spacing and incisor position data as explained in col. 13, lines 53-68, and also, in figure 4 and col. 37, lines 5-18, Andreiko teaches “inputting the data” and “grid lines”.

Examiner considers that “grid lines” represent a table, since it has rows and columns. As can be seen in fig. 4 that the crowding/spacing, curve of Spee spacing, midline spacing and incisor position data is disclosed by Andreiko by letters and coordinates. Since claim 1 is not clear what size or kind of table is to be used to enter data, Andreiko teaches the tables recited by claims 1-44.

D. Applicant argues that Andreiko does not teach “entering first crowding/spacing data in first and second tables”, Examiner respectfully submits that Andreiko teaches inputting the data and grid lines in col. 13, lines 53-68, col. 37, lines 5-18 and Figure 4. As can be seen in Figure 4 that the crowding/spacing, curve of Spee spacing, midline spacing and incisor position data is disclosed by Andreiko by letters and coordinates. Since claim 1 is not clear about the size and kind of table is to be used to enter data, Andreiko teaches the tables recited by claims 1-44.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited bit not used prior art teach Method and apparatus to produce artificial dentures 4551098 A, Dental prosthesis and material for making it 5697785 A, Dental care material and manufacturing method 5773099 A, Manipulable dental model system for fabrication of a dental appliance 6227851 B1, Scanning system and calibration method for capturing precise three-dimensional information of objects 20010038705, Interactive orthodontic care system based on intra-oral scanning of teeth 20020015934, Modified tooth positioning appliances and methods and systems for their manufacture 6497574 B1, Orthodontic treatment planning with user-specified simulation of tooth movement 6632089 B2, Methods for registration of three-dimensional frames to create three-dimensional virtual models of objects 7027642 B2.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dilek B. Cobanoglu whose telephone number is 571-272-8295. The examiner can normally be reached on 8-4:30.

17. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Thomas can be reached on 571-272-6776. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

18. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

Art Unit: 3626

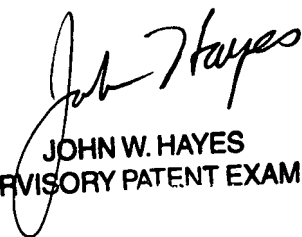
For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Art Unit 3626

08/03/2007


JOHN W. HAYES
SUPERVISORY PATENT EXAMINER